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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,061	08/18/2000	Blake Lewis	103.1035.01	6742

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SWERNOFSKY LAW GROUP PC
P.O. BOX 390013
MOUNTAIN VIEW, CA 94039-0013

EXAMINER

LE, MIRANDA

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 10/24/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,061

Applicant(s)

LEWIS ET AL.

Examiner

Miranda Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 24-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 24-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/11/2003 has been entered.
2. This communication is responsive to Amendment C, filed 08/11/2003.
3. Claims 1-8, 24-45 are pending in this application. Claims 1, 26, 36 are independent claims. In the Amendment C, claims 36-45 have been added, and claims 1-3, 5-6, 24, 26, 28, 30-31, 34 have been amended. This action is made Final.
4. The objection to the specification of the invention has been withdrawn in view of the amendment.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3, 5, 8, 24-28, 30, 33-38, 40, 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rungta et al. (US Patent No. 6,484,186 B1), in view of Kuster et al. (US Patent No. 6,473,775).

As to claims 1, 26, 36, Rungta teaches “a method of capturing the contents of files and directories in a file system, said file system comprising a set of storage blocks in a mass storage system including steps of recording an active map in said file system of said storage blocks used by said active file system” at col. 2, lines 18-66, col. 2, lines 40-65;

“recording a consistency point in said file system including a consistent version of said file system at a previous time, said consistency point including a copy of said active map at said previous time” at col. 3, lines 18-33;

“at least one said copy of said active map included in said consistency point” at col. 4, lines 1-15, col. 4, lines 51-64.

Rungta does not expressly teach “refraining from writing data to storage blocks in response to said active map”. However, Kuster teaches this limitation at col. 8, lines 36-47, col. 8, lines 58-64.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Rungta with the teachings of Kuster to include “refraining from writing data to storage blocks in response to said active map and at least one said copy of said active map included in said consistency point” in order to provide a system and method for

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creating a snapshot with a differential file maintained on the base volume that can grow as much as needed.

As to claims 2, 27, 37, Rungta teaches “said step of refraining includes determining a logical union of said storage blocks used by one or more of said copies of said active map included in said consistency point” at col. 2, lines 40-54, col. 3, lines 18-33, Fig. 4.

As to claims 3, 28, 38, Rungta teaches “said step of refraining includes determining a subset of said storage blocks used by one or more of said copies of said active map included in said consistency point” at col. 4, lines 51-64, col. 4, lines 1-15, Fig. 4.

As to claims 5, 30, 40, Rungta teaches “said active map included in said consistency point is a snapmap” at col. 3, lines 18-33.

As to claims 8, 33, 43, Kuster teaches “steps of copying modified data to a new block and saving old data in a current data block so as to implement a copy-on-write mechanism” at col. 9, line 1 to col. 10, line 47, col. 8, lines 7-18, col. 8, lines 65-67.

As to claims 24, 34, 44, Kuster teaches “the step of generating a summary map responsive to at least one said copy of said active map included in said consistency point” at col. 8, line 65 to col. 9, line 20.

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As to claims 25, 35, 45, Kuster teaches “step of refraining from writing data to said storage blocks is accomplished by being responsive to said summary map” at col. 8, line 65 to col. 9, line 20.

7. Claims 4, 6-7, 29, 31-32, 39, 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rungta et al. (US Patent No. 6,484,186 B1), in view of Kuster et al. (US Patent No. 6,473,775), and further in view of Hitz et al. (US Patent No. 5,819,292).

As to claims 4, 29, 39, Rungta, Kuster does not specifically teach “file system is a WAFL file system”. However, Hitz teaches this limitation at col. 5, lines 48-59, col. 8, lines 16-39, col. 11, lines 6-27.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Rungta, Kuster with the teachings of Hitz to include “file system is a WAFL file system” in order to provide a method for maintaining a file system in a consistent state wherein WAFL always write new data to unallocated blocks on disk.

As to claims 6, 31, 41, Rungta, Kuster does not explicitly teach “the step of removing a root inode of said snapmap using a snap delete”. However, Hitz teaches this limitation at col. 7, lines 1-27, col. 13, lines 2-24, col. 10, lines 18-56.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Rungta, Kuster with the teachings of Hitz to include “the step of removing a root inode of said snapmap using a snap delete” in order to provide a method for maintaining consistent state of a file system.

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As to claims 7, 32, 42, Rungta teaches "steps of determining not to write to a block after said step of removing, provided a previous or next snapmap uses said block" at col. 4, lines 1-15, col. 4, lines 51-64.

Hitz teaches this limitation at col. 4, lines 18-20, col. 11, lines 29-39.

Response to Arguments

8. Applicant's arguments regarding "Hitz is not seen to teach claim 1's feature of refraining from writing data to storage blocks in response to an active map and a copy of an active map included in a consistency point" with respect to claims 1-8, 24-45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit is (703) 872-9306. The TC 2100's Customer Service number is (703) 306-5631.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Miranda Le
October 1, 2003



GRETA ROBINSON
PRIMARY EXAMINER